IN THE CLAIMS:

The following listing of claims will replace all prior versions, and listings, of claims in the application.

1. (Currently Amended) A graphics system comprising:

a graphics processor configured to render an image comprising a plurality of regions, and to generate a plurality of samples that are rendered with a variable density of samples per pixel, wherein the density varies ~~with pixel location, and wherein the graphics processor generates at least a portion of the plurality of samples in a super-sampled manner~~ by region;

a sample buffer coupled to said graphics processor for storing the plurality of samples ~~having the variable density, wherein the plurality of samples comprised in the sample buffer correspond to an entire frame of a display~~; and

a sample-to-pixel calculation unit coupled to said sample buffer, wherein said sample-to-pixel calculation unit is configured to select samples from the sample buffer and filter said ~~stored~~ samples to form output pixels~~, wherein the output pixels correspond to the entire frame of the display~~.

2. (Currently Amended) The graphics system as recited in claim 1, wherein said graphics processor is configured to vary the density of the samples generated ~~per pixel~~ within a particular region on a basis selected from the group consisting of: a per-scan line basis, a per-group-of-scan-lines basis, ~~a per-region basis,~~ a per-pixel basis, and a per-group-of-pixels basis.

3. (Original) The graphics system as recited in claim 1, wherein said density is varied according to one or more of the following: input from an eye-tracking device, input from a head-tracking device, input from a hand-tracking device, input from a mouse, a cursor position, a visible object position, and a main character position.

4. (Original) The graphics system as recited in claim1, wherein said density is varied according to input from a gaze tracking device.

5. (Currently Amended) The graphics system as recited in claim 1, wherein said density for a particular region is selected ~~on a per frame region basis~~ from a predetermined ~~group~~ set of densities.

6. (Currently Amended) The graphics system as recited in claim 1, wherein said density is substantially continuously variable across one or more ~~frame~~ region boundaries.

7. (Original) The graphics system as recited in claim 1, wherein said sample-to-pixel calculation unit is configured to filter samples to form output pixels on a real time basis.

8. (Original) The graphics system as recited in claim 1, wherein said sample-to-pixel calculation unit is configured to filter samples to form output pixels on an on-the-fly basis.

9. (Original) The graphics system as recited in claim 1, wherein at least a part of each sample is double-buffered in said sample buffer.

10. (Currently Amended) The graphics system as recited in claim 1, further comprising a sample position memory coupled to said graphics processor, wherein said sample position memory is configured to store information usable to determine sample positions for each sample rendered for a particular pixel position.

11. (Original) The graphics system as recited in claim 1, further comprising a sample position memory coupled to said graphics processor, wherein said sample position

memory is configured to store one or more sample position schemes, and wherein said graphics processor is configured to read sample positions from said sample position memory.

12. (Original) The graphics system as recited in claim 1, further comprising a sample position memory coupled to said graphics processor, wherein said sample position memory is configured to store one or more sample position schemes for one or more sample densities, wherein said graphics processor is configured to read sample positions from said sample position memory according to a selected sample density and a selected sample position scheme.

13. (Currently Amended) The graphics system as recited in claim 1, wherein said graphics processor is configured to store samples ~~are stored~~ in said sample buffer according to bins, wherein each bin has a position, wherein ~~said sample position memory is configured to store said sample positions~~ each sample within a bin ~~as offsets~~ is assigned an offset relative to said bin positions, and wherein said bin positions correspond to pixel positions on a display device.

14. (Currently Amended) The graphics system as recited in claim ~~13, wherein said bin positions corresponds to pixel positions on a display device~~ 1, wherein said select samples comprises selecting a specified portion of the samples corresponding to each pixel.

15. (Currently Amended) The graphics system as recited in claim ~~1, wherein said graphics processor is configured to store said samples into said sample buffer according to bins, and wherein said bins correspond to screen space areas~~ 14, wherein the specified portion varies by region.

16-23. (cancelled)

24. (Currently Amended): A method for producing output pixels for a graphics system, the method comprising:

generating a plurality of samples in a super-sampled manner, wherein at least a portion of the plurality of samples are rendered with a variable density of samples per pixel that varies ~~with pixel location~~ by region, wherein a plurality of regions comprise an image;

storing the plurality of samples, wherein the stored plurality of samples correspond to ~~an entire frame of a display~~ the image; and

selecting and filtering the stored samples to form output pixels, wherein the output pixels correspond to ~~the entire~~ a frame of the display.

25. (Original) The method of claim 24, wherein said storing comprises storing the plurality of samples in a double buffered fashion.

26. (New) A graphics system comprising:

a graphics processor configured to render an image comprising a plurality of regions, and to generate a plurality of samples that are rendered with a variable density of samples per pixel, wherein the density varies by region;

a sample buffer coupled to said graphics processor for storing the plurality of samples, wherein the samples are stored in bins, and wherein bin size varies by region based on the density of samples per pixel for each region; and

a sample-to-pixel calculation unit coupled to said sample buffer, wherein said sample-to-pixel calculation unit is configured to select samples from the sample buffer and filter said samples to form output pixels.

27. (New) The graphics system of claim 26, wherein said select samples comprises selecting a specified portion of the samples in each bin.

28. (New) The graphics system of claim 27, wherein the specified portion varies by region.

29. (New) The graphics system of claim 27, wherein the specified portion for each region is determined by input from a tracking device.

30. (New) A graphics system comprising:

a graphics processor configured to render an image comprising a plurality of regions, and to generate a plurality of samples that are rendered with N samples per pixel, wherein N is an integer greater than 1;

a sample buffer coupled to said graphics processor for storing the plurality of samples, wherein the samples are stored in bins, and wherein each bin has N samples; and

a sample-to-pixel calculation unit coupled to said sample buffer, wherein said sample-to-pixel calculation unit is configured to select samples from the sample buffer and filter said samples to form output pixels, wherein said select samples comprises selecting a specified portion of the N samples from each bin, and wherein the portion is less than N.

31. (New) The graphics system of claim 27, wherein the specified portion varies by region.

32. (New) The graphics system of claim 27, wherein the specified portion for each region is determined by input from a tracking device.